

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method for increasing or decreasing nitrogen metabolism in plant cells, said method comprising the steps of transforming a plant cell with a recombinant polynucleotide comprising a polynucleotide sequence encoding a polypeptide having glutamate dehydrogenase activity, and culturing said cell whereby descendant cells are produced which comprise said polynucleotide sequence and express said polynucleotide sequence, whereby nitrogen metabolism is increased or decreased as compared to nitrogen metabolism of untransformed plant cells; wherein said polynucleotide sequence is operably linked to a polynucleotide encoding a chloroplast transit peptide, and wherein the chloroplast transit peptide comprises SEQ ID NO: 5 or SEQ ID NO: 6, or a fragment thereof of sufficient length to exhibit chloroplast transit activity.

2-6. (Cancelled)

7. (Original) The method of claim 1, wherein said polypeptide is selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 24, SEQ ID NO: 26, and fragments of any of the foregoing of sufficient length to exhibit α -GDH or β -GDH activity.

8-9. (Cancelled)

10. (Currently Amended) A method of increasing biomass, increasing total protein in seeds and plants, increasing total carbon/nitrogen level, increasing grain density, or increasing plant yield comprising culturing a plant comprising transgenic cells that comprise a polynucleotide encoding a polypeptide having glutamate dehydrogenase activity under conditions where said polynucleotide is expressed in said cells, whereby biomass is increased, total protein in seeds and plants is increased, total carbon/nitrogen level is increased, grain density is increased, or plant yield is increased, as compared to an untransformed plant; wherein said polypeptide is selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 24, SEQ ID NO: 26, and fragments thereof having glutamate dehydrogenase activity.

11-20. (Cancelled)

21. (Currently Amended) Transgenic plant cells comprising an expression cassette having:
a tissue specific transcription initiation region functional in said transgenic plant cells;
a DNA sequence that encodes an a bacterial NADP-GDH enzyme in said transgenic plant cells; and

a transcription termination region functional in said transgenic plant cells; wherein said expression cassette imparts increased yield to a transgenic plant resulting from the transgenic plant cells relative to wild-type plants resulting from wild-type plant cells.

22-24. (Cancelled)

25. (Currently Amended) The transgenic plant cells according to claim 2321, further comprising a chloroplast transit peptide adapted to target the NADP-GDH enzyme to the chloroplasts.

26-27. (Cancelled)

28. (Currently Amended) The transgenic plant cells according to claim 2721, wherein said e transcription initiation region is seed specific.